

Article

Association between Mothers' Attachment Styles and Parenting Stress among Japanese Mothers with Toddlers

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Abstract: Parenting stress is affected by various factors, including maternal attachment; however, the number of studies focusing on Japanese samples is limited. As such, we explored the association between mothers' attachment styles and parenting stress among Japanese mothers with 18-month-old toddlers. This cross-sectional study was conducted in Sasebo City, Japan between 2018 and 2019. Anonymous self-reported questionnaires were distributed to 1399 mothers who attended an infant health check-up. We categorized maternal attachment style as secure, anxious/ambivalent, or avoidant, and conducted a multiple logistic regression analysis to evaluate the associations between each attachment style and parenting stress. Of the 1399 mothers, 529 responded to the survey (37.8%). About 40% reported experienced parenting stress. Further, approximately two-thirds showed a secure attachment style, 20% had an anxious/ambivalent style, and 15% had an avoidant style. In the multiple logistic regression analysis, the ambivalently attached mothers had a significantly higher level of parenting stress than those with secure attachment (odds ratio = 2.4, 95% confidence interval (1.5, 3.9)), but avoidantly attached mothers did not have a significantly higher level of parenting stress than those with secure attachment (odds ratio = 0.9, 95% confidence interval (0.5, 1.6)). The findings demonstrate that an anxious/ambivalent attachment style is associated with a higher level of parenting stress than a secure style. Thus, it is important for experts to understand the mother's attachment style when offering childrearing support.

Keywords: attachment style; parenting stress; mothers; toddlers; Japan; cross-sectional study



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1. Introduction

High levels of parenting stress are one of the causes of child abuse [1,2], and it is an important issue in the field of public health. In Japan, caregivers experience parenting stress [3] owing to the higher number of nuclear families and less social support compared to half a century ago [4,5]. The rate of working mothers who have children aged below 18 years old was 56.7% in 2004, which increased to 72.4% in 2019 [6]. On the other hand, the custom of the long working hours of fathers in Japan makes it difficult for them to be involved in childrearing at home. Takehara et al. [7] found that both parents feel psychological distress in the family, with a father who is working more than 55 h per week. Moreover, Baba et al. [8] mentioned that the father's involvement in parenting might reduce and/or

prevent spanking children. While it is clear that fathers' participation in child rearing leads to better results, the reality is that there is a strong belief that women's role to take the main responsibility for child rearing and housework at home in Japan. Given this situation, the Japanese government and private organizations have been addressing external factors, such as increasing the amount of social support and facilitating the dissemination of accurate information about childrearing [9]. However, these kinds of operations have not been carried out successfully, and the number of mothers who experience parenting stress remains high [10]. The number of parents with parenting stress is 55.5%, according to the Japanese national survey in 2002 [11].

In particular, children around the age of one and a half years are more active than infants, and they are able to feed themselves. A survey of parents with children as young as one and a half years old found that the child's temperament was related to parenting stress [12]. This may have been influenced by the development of the child's ego around the age of two. The parent-child relationship then develops differently from that of infancy. Parents who have difficulty coping with these changes will experience increased parenting stress.

Mulsow et al. [13] examined the predictors of parenting stress and classified them into three components: parental factors (age, economic status, educational level, maternal personality, etc.); child factors (age, gender, temperament, behavioral characteristics, etc.); and family system factors (relationship with the partner, general social support, etc.) [13–17]. The difficulty in solving the problem of parenting stress is due to the complex interplay of psychosocial factors that increase parental stress. Japanese society has been tackling the external factors regarding parenting stress; however, we might need to consider not only external factors but also the mothers' internal factors to tackle this challenge.

According to Bowlby, the style of attachment formed between a caregiver and child can influence the ability to communicate with other people in adulthood [18–20]. Hazan and Shaver [21] divided adult attachment into three styles: secure, anxious/ambivalent, and avoidant. People with a secure attachment style find it comparatively easy to get close to others, and they are comfortable with relying on others and having others depend on them [22]. People with an anxious/ambivalent attachment style find that others are unwilling to be as close as they would like, are often concerned that their romantic partners do not really love them or will not stay with them, and frequently want to be close to their partners [22]. People with an avoidant attachment style are uncomfortable being close to others, find it difficult to entirely believe in and rely on others, and feel nervous if anybody gets too close [22].

People with an avoidant attachment style experience a higher level of stress after the birth of their child and perceive parenting to be less satisfying or personally meaningful than parents with other attachment styles [23]. Trillingsgaard et al. [24] studied 1069 nulliparous women in Denmark and reported that both the avoidant and ambivalent attachment styles were associated with parenting stress at one year postpartum. Moreover, in Japan, Mandai et al. [25] discovered that securely attached mothers of children aged under three years felt significantly less isolated than parents with other attachment styles. However, the number of studies examining attachment style and parenting stress, especially among Japanese mothers, is limited. Our research question is, in which category of attachment style are mothers more likely to have parenting stress in a Japanese setting. We hypothesized that mothers with an anxious/ambivalent and/or an avoidant attachment style have more parenting stress than mothers with a secure one. Therefore, we aimed to explore the association between Japanese mothers' attachment styles and parenting stress by considering the various factors related to parenting stress.

2. Materials and Methods

2.1. Design and Sample

Our cross-sectional study was conducted using anonymous self-reported questionnaires between 6 July 2018 and 10 May 2019. Public health nurses distributed the question-

naires to 1399 mothers who attended a health check-up for their 18-month-old toddlers at a health center, which is utilized by around 95% of all parents in Sasebo City, Japan (target population per annum ~2000). There was no selection filter to choose participants, we targeted mothers who participated in a health check-up. The timing to hand over the questionnaire was the last period when the health check-up had been completed. By returning the questionnaires, the mothers were deemed to have agreed to participate in the study.

Of the 1399 mothers, 529 responded to the survey (response rate 37.8%). We excluded 28 questionnaires from the analysis because of missing answers. We also excluded 30 questionnaires because the total score of two attachment styles was the same, and it was impossible to allocate the individuals into only one of the three attachment style groups. Consequently, we analyzed the data of 471 participants. The Ethics Committee of Nagasaki University Graduate School of Biomedical Sciences approved the study (20 June 2018; permission number: 18011110-2). The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

2.2. Measures

The questionnaires consisted of items related to parental, child, and family system factors. Parenting stress was assessed by the question “Do you currently feel anxious about caring for a child?” The response options were “yes,” “somewhat,” “rarely,” and “not at all.” In the present study, parenting stress was dichotomized into yes (“yes” and “somewhat”) and poor (“rarely” and “not at all”). The reason we could not use an index such as the Parenting Stress Index (PSI), which is used worldwide to evaluate the degree of parenting stress, was because Sasebo city was worried about the emotional effect on the respondents, as it might be tough for mothers who already had severe parenting stress to answer some questions in the PSI, such as ‘I feel trapped by my responsibilities as a parent.’ or ‘I feel alone and without friends.’. Nevertheless, a study has previously shown that single-rating scales on parenting stress were used and could identify the associated factors with parenting stress [3]. Attachment styles were assessed using the Internal Working Models (IWM) scale developed by Takuma and Toda in 1988 [26]. The mothers were asked to rate each item on a seven-point scale ranging from 1 (does not describe me at all) to 7 (describes me really well). The IWM scale includes three subscales based on the styles of attachment proposed by Hazan and Shaver [21]: secure attachment (e.g., “I find it relatively easy to get close to people”), anxious/ambivalent attachment (e.g., “I find that others are reluctant to get as close as I would like”), and avoidant attachment (e.g., “I am somewhat uncomfortable being close to others”). The style with the highest total score within the three subscales is representative of the respondent’s attachment style. The test/re-test reliability and validity of the IWM scale have been confirmed [27–30]. Cronbach’s alpha was 0.87 for the secure attachment scale, 0.84 for the ambivalent/anxious scale was, and 0.78 for the avoidant scale in the current study.

The questionnaires consisted of items related to parental, child, and family system factors. Parental factors included the mothers’ socioenvironmental status (age, educational level, employment status, economic status, family structure, and length of residence in their current location), satisfaction with pregnancy and delivery, parenting stress, and attachment style. Child factors included sex, rank of birth, development (asking the question “How is your child developing?”), and temperament (asking the question “How is your child’s temperament?”). Family system factors included the presence of a partner, social support (whether they had somebody to consult and somebody who could help with childcare), interaction with the community, and reliance on the community.

2.3. Statistical Analysis

For the univariate analysis, we employed the chi-square test and Cochran–Armitage trend test to assess the associations between parenting stress and the other variables. In this study parenting stress is the dependent variable and we binarized responses to questions regarding parenting stress asked using the four-point Likert scale.

We conducted multiple logistic regression analysis to evaluate the associations between each attachment style and parenting stress. We also calculated the odds ratio and 95% confidence interval. Only those variables that showed a significant association in the univariate analysis ($p < 0.30$, chi-square test and Cochran–Armitage trend test) were included in the model. We selected the most appropriate model based on Akaike’s information criterion. p values < 0.05 were considered significant. All statistical analyses were performed using the Statistical Analysis System software version 9.4 (SAS Institute, Cary, NC, USA).

3. Results

3.1. Descriptive Statistics: Sample Characteristics

Table 1 summarizes the characteristics of the 471 mothers. The participants’ mean age was 33.2 (± 5.1) years, and 295 mothers (62.6%) were between 30 and 39 years old. In terms of family structure, nuclear families accounted for 419 households which is 89% of all households. Of the 471 mothers, 38.6% of them experienced parenting stress. In terms of attachment style, 308 mothers (65.4%) exhibited a secure style, 94 mothers (20%) had an anxious/ambivalent style, and 69 mothers (14.6%) had an avoidant style. In terms of child factors and family system factors, the family which had one child accounted for 210 (44.6%), and the number of mothers who felt their child’s temperament was a little difficult was only 16 (3.4%). The number of mothers who did not have a partner was only 9 (1.9%), 91.7% of mothers had somebody to consult with regarding childcare and 79.6% of mothers had somebody to help with childcare.

3.2. Univariate Analysis

Table 1 presents a comparison of characteristics between those with and without parenting stress. The percentage of mothers with parenting stress in the anxious/ambivalent style group was significantly higher than that in the secure and avoidant style groups ($p < 0.001$). Moreover, mothers who reported the following attributes obtained significantly higher parenting stress scores: poor perceived economic status ($p = 0.008$); feeling that the child has a difficult temperament ($p = 0.002$); absence of people to consult regarding childcare ($p < 0.001$); receiving no help with childcare ($p < 0.001$); poor interaction with the community ($p = 0.012$); and a lack of reliance on the community ($p = 0.007$).

3.3. Multivariate Analysis

The results of the multiple logistic regression analysis, which examined the factors associated with parenting stress, are presented in Table 2. The anxious/ambivalent attachment style was significantly associated with parenting stress when secure attachment was used as the reference, whereas the avoidant style was not associated with parenting stress. The covariates of poor perceived economic status; being a first-time mother; feeling that the child has a difficult temperament; absence of people to consult regarding childcare; and receiving no help with childcare were associated with a high level of parenting stress.

Table 1. Characteristics of the Participants and Association between Predictive Factors and Parenting Stress.

Characteristics	Whole	Parenting Stress: Yes	Parenting Stress: No	<i>p</i>
	<i>n</i> = 471	<i>n</i> = 182	<i>n</i> = 289	
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Parental factors				
Age (years)				0.153 ^a
18–29	123(26.1)	51(28.0)	72(24.9)	
30–39	295(62.6)	116(63.7)	179(61.9)	
>39	53(11.3)	15(8.2)	38(13.1)	
Level of education				0.634
Junior high/high school	151(32.1)	56(30.8)	95(32.9)	
College/university	320(67.9)	126(69.2)	194(67.1)	
Employment status				0.552
Employed	290(61.6)	109(59.9)	181(62.6)	
Unemployed	181(38.4)	73(40.1)	108(37.4)	
Perceived economic status				0.008
Poor	133(28.3)	64(35.2)	69(23.9)	
More than moderate	338(71.7)	118(64.8)	220(76.1)	
Family structure				0.741
Nuclear family	419(89.0)	163(89.6)	256(88.6)	
Extended family	52(11.0)	19(10.4)	33(11.4)	
Length of residence in the current location (years)				0.780
<5	260(55.2)	99(51.6)	161(55.7)	
>5	211(44.8)	83(48.4)	128(44.3)	
Satisfaction with pregnancy and delivery				0.506
Satisfied	463(98.3)	178(97.8)	285(98.6)	
Not satisfied	8(1.7)	4(2.2)	4(1.4)	
Attachment style				<0.001
Secure	308(65.4)	101(55.5)	207(71.6)	
Anxious/ambivalent	94(20.0)	53(29.1)	41(14.2)	
Avoidant	69(14.6)	28(15.4)	41(14.2)	
Experience of parenting stress				N/A
Yes	182(38.6)	182	0	
Poor	289(61.4)	0	289	
Child factors				
Sex of target infant in cohabiting family				0.678
Boy	235(49.9)	93(51.1)	142(49.1)	
Girl	236(50.1)	89(48.9)	147(50.9)	
Position of target infant in cohabiting family				0.135
First child	210(44.6)	89(48.9)	121(41.9)	
Second child or younger	261(55.4)	93(51.1)	168(58.1)	
Child's development				0.134
Good	467(99.2)	179(98.4)	288(99.7)	
Poor	4(0.8)	3(1.6)	1(0.3)	
Child's temperament				0.002
Not difficult	455(96.6)	170(93.4)	285(98.6)	
Difficult	16(3.4)	12(6.6)	4(1.4)	
Family system factors				
In a relationship				0.293
Yes	462(98.1)	177(97.3)	285(98.6)	
No	9(1.9)	5(2.7)	4(1.4)	
Presence of somebody to consult regarding childcare				<0.001
Yes	432(91.7)	155(85.2)	277(95.8)	
No	39(8.3)	27(14.8)	12(4.2)	
Presence of somebody to help with childcare				<0.001
Yes	375(79.6)	128(70.3)	247(85.5)	
No	96(20.4)	54(29.7)	42(14.5)	
Interaction with the community				0.012
Good	262(55.6)	88(48.4)	174(60.2)	
Bad	209(44.4)	94(51.6)	115(39.8)	
Reliance on the community				0.007
Reliant	436(92.6)	161(88.5)	275(95.2)	
Not reliant	35(7.4)	21(11.5)	14(4.8)	

N = 471. The chi-square test was performed. ^a Cochran–Armitage trend test.

Table 2. Multiple Logistic Regression Analysis Between Attachment Styles and Parenting Stress.

Factors		OR	95% CI	<i>p</i>
Attachment style	Secure (n = 308)	ref.		
	Anxious/ambivalent (n = 94)	2.4	[1.5, 3.9]	0.001
	Avoidant (n = 69)	0.9	[0.5, 1.6]	0.712
Covariates				
Perceived economic status				
	More than moderate (n = 338)	ref.		
	Poor (n = 133)	1.7	[1.1, 2.6]	0.023
Position of target infant in cohabiting family				
	Second child or younger (n = 261)	ref.		
	First child (n = 210)	1.6	[1.1, 2.3]	0.027
Child's temperament				
	Not difficult (n = 455)	ref.		
	Difficult (n = 16)	4.2	[1.2, 14.0]	0.020
Presence of somebody to consult regarding childcare				
	Yes (n = 432)	ref.		
	No (n = 39)	2.3	[1.0, 5.4]	0.048
Presence of somebody to help with childcare				
	Yes (n = 375)	ref.		
	No (n = 96)	1.9	[1.1, 3.2]	0.026
<i>R</i> ²		0.138		

N = 471. OR = odds ratio; CI = confidence interval.

4. Discussion

The percentage of mothers with parenting stress was 38.6% in this study. This is consistent with the results of Japanese national research, which mentioned 55.5% of parents showing parenting stress [11].

4.1. Attachment Style and Parenting Stress

Our results showed that mothers who did not have an avoidant attachment style, but did have an anxious/ambivalent attachment style, had significantly greater parenting stress than those with a secure style, so our hypothesis was therefore confirmed. Similarly, in Mazzeschi et al.'s [31] study in Italy, only mothers with an anxious attachment style experienced significant parenting stress three months after childbirth. Moreover, other studies have shown that the two dimensions of anxiety and avoidance are associated with parenting stress [24,32]. On the contrary, Moreira and Canavarro [33] found that in mothers who were caring for children or adolescents with type 1 diabetes, those with an avoidant attachment style had significantly greater parenting stress than those with an anxious attachment style. Some differences in study design may explain the inconsistency in results regarding the ambivalent and avoidant styles, such as variations in the timing of assessment [32], whether the individual was a first-time mother or not [24], and the target child's characteristics [33]. In Japan, parenting training and attachment-based interventions developed in Australia or the USA have been introduced in recent years, and their effectiveness has been demonstrated [34,35]. It is expected that the promotion of such interventions in local communities will reduce the parenting stress of mothers with insecure attachments.

4.2. Being a First-Time Mother and Parenting Stress

There was an association between rearing the first child and parenting stress in the current study. This result agrees with the results in Akazawa et al. [3], which targeted mothers at the community level. Primiparous mothers have more difficulties in coping with their life changes than multiparous women do [36]. Furthermore, the quality of the relationship with their partner is one of the vital points in adjusting to parenthood [37]. These kinds of changes might increase the level of parenting stress.

4.3. Child with a Difficult Temperament and Parenting Stress

We found that mothers of children with a difficult temperament had a significantly higher level of parenting stress than others. Studying mothers with infants aged eight months, Oddi et al. [38] reported that those who considered the child's temperament difficult had a significantly higher level of parenting stress. Another research also stated that the mothers who were bringing up toddlers aged one and a half years that had a difficult temperament have significantly higher parenting stress [12]. In addition to this, Japanese mothers have a more negative perception of children's temperament than that of American mothers [39]. Therefore, professionals may need to understand how these mothers can seek help with consideration of cultural settings.

4.4. Social Support and Parenting Stress

Our study indicated that mothers who had fewer people whom they could consult or who could help them with childrearing experienced significantly greater parenting stress. Previous research has also reported an association between social support and parenting stress [16,40,41]. In their study of mothers with infants aged nine months in Scotland, Parkes et al. [16] found that those who had a bigger social network, which included grandparents or friends, had a significantly lower level of parenting stress. Moreover, regarding child abuse potential, it was observed that mothers with higher scores had significantly lower levels of perceived social support [42].

4.5. Economic Status and Parenting Stress

In our study, there was also an association between poor perceived economic status and parenting stress. This is in line with previous research [15,43]. For example, using the data of 6821 parental dyads of infants aged nine months in Ireland, Matvienko-Sikar et al. [43] found that the economic situation was associated with maternal parenting stress.

4.6. Limitations

There are several limitations to our study. First, owing to the low response rate (37.8%), there is the potential for selection bias. Avoidantly attached mothers may not have answered the survey; therefore, the statistical power may be reduced. Second, parenting stress was measured by a single item. The reason we could not use an index, such as the Parenting Stress Index (PSI), was explained in the methods section. Even if we could not use the PSI this time, this single item could identify the mothers who need support during child-rearing in society. Third, the generalization of our findings will be considered. As our study has a low response rate, was conducted in one location in Japan, and used a single question as an outcome, it is difficult to generalize the results. Lastly, we did not explore paternal attachment styles. This aspect must be considered in future studies, as married couples are likely to engage in childrearing together.

5. Conclusions

We discovered that mothers with an anxious/ambivalent attachment style had a significantly higher degree of parenting stress than those with a secure attachment style at 18 months postpartum. In contrast, avoidant mothers did not have a higher level of parenting stress compared to secure mothers. It is important to ascertain the mother's attachment style from an early stage and create a system that can provide support when the mother needs it. We encourage more studies regarding the effect on upbringing by paternal attachment style.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Conflicts of Interest: The authors declare that they have no conflict of interest.

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